Fourth Edition

Urban Land Use Planning

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A Local Government Land Use Planning Program

In order to be useful in local government decision-making about land development, the land use planning program should provide three types of services:

1. Intelligence—the gathering, organization, and dissemination of information
2. Advance plan making—the formulation of coordinated land use and guidance system proposals . . .
3. Action planning—active, on-line participation in ongoing decisions about land use issues

—Chapin and Kaiser 1979, 69

This chapter prescribes the set of activities, products, and players that constitute a land use planning program. The land use planning program is how the planner manages the land use game and provides useful services to the various land use game players. In many ways it formalizes the planner's role in local government. The program we describe is intended as both an ideal model and as the framework for the studies described in later chapters, showing how they fit together to form an effective force in the community.

The Four Functions of a Land Use Planning Program

We see land use planning as serving four functions in the community's management of change—intelligence, advance planning, problem solving, and operating the community's development management system (Figure 3-1). Those four services should be provided to both public and private decision-makers to improve community discourse and land use decisions and to achieve a more desirable future in which social use, market values, and environmental values are in balance.

Intelligence consists of gathering, organizing, analyzing, and disseminating information to stakeholders in the use and development of land. Intelligence alerts decision-makers to conditions, trends, and projections as well as the social, economic, and environmental impacts of those projections and proposed alternative decisions (i.e., impact assessments). It aims to serve public officials and agencies primarily but also provides information to private firms, organizations, and indi-

viduals. The presumption is that better information will lead to improved public discourse, more equitable and effective policy, and better land use decisions.

Advance plan-making, the most traditional function of a land use program, consists of making long-range and intermediate-range plans. That involves formu-

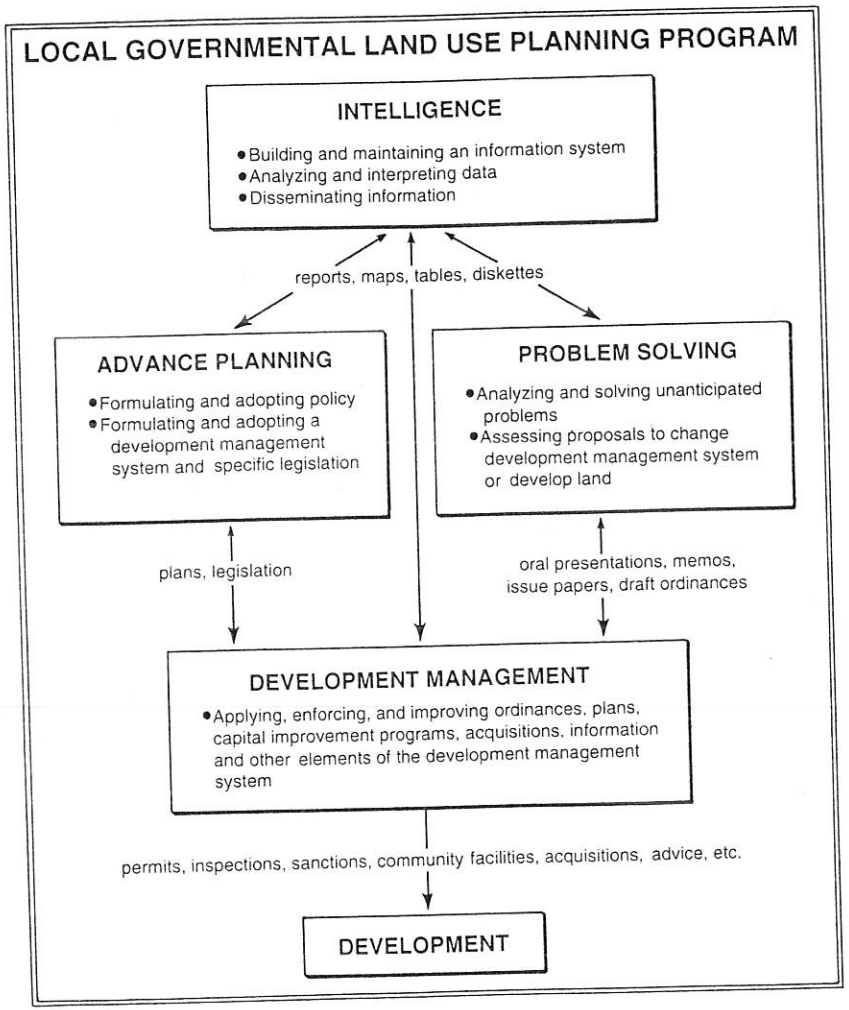


Figure 3-1. The Four Functions of a Land Use Planning Program, Their Sub-elements, and Their Linkages

lating goals; defining desirable future land use patterns that balance social, market, and environmental values; devising policies and action programs to achieve them; and getting such policies and programs adopted.

Problem solving assists the community in addressing issues not anticipated adequately in advance planning. Sometimes referred to as "brush fires," these issues call for a "firefighting" capacity in local government. In contrast to advance plan-making, problem solving is responsive rather than anticipatory and isolates salient features of individual problems rather than coordinating solutions across many community issues.

Managing development, the fourth function of a land use planning program, involves the day to day administering, enforcing, and revising of policies, regulations, public investments, and other measures that constitute the actual (as opposed to proposed) development management system. Included are such activities as negotiating stipulations in permitting procedures, monitoring and enforcing permits and public investment policies, invoking sanctions where necessary, and seeing to funding, site selection, and site planning for community facilities. In other words, this function includes all aspects of implementation after adoption. This is where the planner plays one on one with the other players in the land use game.

The Intelligence Function

The capacity to provide intelligence begins with building and maintaining an information system, which is also necessary for advance planning, problem solving, and managing land use controls. The planner must design and build the database, maintain it, obtain suitable hardware and software, assemble people with information processing skills, and, finally, employ that information system creatively and effectively. Thus, an information system is much more than data files, maps, and computer hardware and software, although computer technology is a virtual necessity today. Rather, a planning information system is the entire approach to obtaining, storing, retrieving, and analyzing data and presenting information in response to specific intelligence needs of the planning program, elected and appointed officials, and other players in the community land use game. The information system should be designed to provide facts and values about all three aspects of land use and development systems—social, market, and environmental. That includes past conditions, present conditions, trends, and alternative projections of future conditions based on varying scenarios.

Several tasks are involved in building an information system. They include identification of key information files to be included (e.g., files on the economy, population, land use, land supply, status of land undergoing development, environmental features and systems, community facilities and infrastructure, and existing land use controls and policies). Data for those files must be specified. Where appropriate, the data should be geographically referenced by grid coordinates, census block, census tract, watershed, and other spatial identifiers. The planner must

assemble the data, update it regularly, and maintain the system. Models and procedures must be developed for summarizing and analyzing data, projecting conditions, and putting it into appropriate forms for better communication.

After constructing the information system, the planner faces the tasks of actual data retrieval and analysis to convert it to useful information. These tasks involve the presentation of summary statistics, including maps showing spatial variation in those statistics and graphs showing trends over time. The planner must also be able to identify current and projected deficiencies and current and future needs of the community and various groups within it. Anticipating and interpreting social, market, and environmental effects of specific policies and ordinances is also required.

More complex inferences about present and future conditions relating to land use, environment, and infrastructure require simulation models. At its highest level, intelligence transforms data into patterns of facts, estimates, projections, values, and criteria for decision-making. It also includes building an understanding of cause-and-effect relationships, which requires data on causes as well as conditions, and data from the past that can be analyzed to establish trends and cause-and-effect relationships.

Finally, intelligence includes the important step of disseminating information to the various players in the land use game. That means publication of current conditions, status of government programs, and projections of future conditions. It also means making information available upon request to participants in the land planning and development game when they need it, during advance planning procedures, during problem solving, and during permitting procedures. Players may also be provided their own access to the information system and their own means of analyzing data.

The Advance Planning Function

Two main types of advance plan-making are advocated in this text: policy planning and development management planning. These two types of plans are not mutually exclusive, and in fact we argue for a hybrid plan. The policy plan element features a future goal form—expressed as a map of the future land use pattern—and general policies about governmental action to achieve the goal form. The development management plan is a program of procedures and standards for regulating development, a schedule for funding and building community facilities and infrastructure, and a set of incentives for development decisions. It is shorter-range, more specific than a policy plan, and obviously more oriented toward means than ends.

The two types of plans are associated with two branches of planning theory and planning history. The goal form and policy plan is associated with the planning profession's roots in the design professions. A plan is a proposed physical design, a vision of a future land use pattern as a goal form to be pursued. The development management plan draws more from later planning theory that took root in

the 1950s and 1960s, wherein a plan is conceived more as a proposed course of action than a vision of the future. This perspective borrows more from the social sciences and the fields of systems analysis, policy analysis, and business administration rather than from architecture and landscape architecture. Thus, the development management system plan is a proposed mix of regulations, community investments, and other actions.

What we propose is a merging of the two perspectives, a plan that is both a vision of the future *and* a course of action and has general and specific components as well as long-range and short-range proposals. We also propose that the general, long-range, vision-oriented, mapped policy planning precede and guide the shorter-range, specific, action-oriented development management planning.

Plans, whether policy-oriented, action program-oriented, or a hybrid, should have four components: a fact component, a goals component, a solution component, and an evaluation component. The fact component or fact basis consists of an analysis of relevant past, current, and projected facts about the community, its problems, and their causes. The goals component represents the values of the community in the form of goals and objectives and policies from state and local government that must be followed. The solutions component consists of at least one and sometimes several alternative goal forms, policies, and combinations of development management measures. The evaluation component consists of an assessment of alternatives, including the no-intervention or no-change-in-policy alternative. It is sometimes missing from the final plan but should be a formal step in the design and adoption process.

The Policy Plan Various meanings have been ascribed to the terms *development policies, land use policies,* or *land and environmental policies.* Some policies are input policies; they have been previously determined by state or federal governments, agreed to by a regional association of local governments, or adopted previously by community officials. Input policies are in the form of legislation, administrative rules and guidelines, resolutions, or plans. Such policy inputs are important and may be incorporated into advance plans, problem solving proposals, and development management, but they are inputs to, not outputs of, advance planning.

The policies of primary concern here, however, are output policies resulting from advance planning. Output policies are explicit public decision guides designed to provide consistency in development guidance decisions over time. A land use goal form is itself a policy statement and is usually supported by other policies designed to encourage achievement of that goal form.

Plans do not become meaningful policy, however, until elected and appointed officials adopt them and employ them consistently. A policy plan might state where and when sewers will be extended, for example, and under what conditions, and who would pay for them, but it remains "potential" policy until actually employed in sewer extension decisions. Thus, to the extent that policy continues to be defined as it is being interpreted and enforced, policy design continues into imple-

mentation. In that sense, planning does not stop with adoption of the plan, but continues through implementation. Hence, the inclusion of development management as one of the four components of the planning program.

Policy Plan Formats The policy planning track of advance planning begins with a problem analysis and goal-setting element and a review of input policies. It then seeks to transform the goals and input policies into output policies that also reflect the conditions, causes, and projections that problem analysis highlights. The policies are expressed in one of three forms, or in a mix of them.

1. A verbal statement.
2. A land classification plan, which maps areas where development should occur and other areas where it should be discouraged over some specific period and where natural resources are to be protected. Both areas for development and areas not to be developed are mapped and accompanied by policies that encourage the outcome specified by the land classification.
3. A land use design, which maps more detailed designations of land uses than does the land classification plan and constitutes the desired future spatial organization of land uses—a goal form.

The three formats are quite different, each with its own advantages and limitations.

The verbal policy format focuses on written statements of policy without mapping or committing to a specific spatial goal form for future development. The policy excerpts in Figure 3-2 are taken from the 1983 Calvert County (Maryland) Comprehensive Plan, which won an award from the American Planning Association in 1985. The policies are concise and easy to grasp, and they are grouped in sections corresponding to the six divisions of county government assigned to implement the policies. The Calvert County plan contains no land use map.

The verbal policy format is the easiest, quickest, and most flexible of the three policy plan formats. Some planners also claim that it avoids people's inclination to rely too heavily on maps, which are difficult to keep up to date to reflect current interpretation of basic policy (Hollander et al. 1988). However, verbal statements in the absence of maps provide little spatial specificity, and therefore lack teeth. Our judgment is that the plan should supplement verbal policy with policy maps. In fact, the verbal policy statement is a good first step in formulating a land classification or land use design plan and is often a part of those type plans.

The land classification format can be a follow-up to the verbal policy statement approach, or combine the verbal policy and land classification formats. It focuses on specifying the location and timing of future urban development and on protecting "critical" areas, particularly environmentally vulnerable areas, productive agricultural, and forest lands, from development. Both the areas earmarked for development and those to be protected from development are mapped.

In format, the land classification plan divides the region into districts, with separate policies for each district type. The number and types of districts vary from case to case. In its simplest, or level-one, format, three types of policy districts

INDUSTRIAL DISTRICTS

Industrial Districts are intended to provide areas in the county which are suitable for the needs of industry. They should be located and designed to be compatible with the surrounding land uses, either due to existing natural features or through the application of standards.

RECOMMENDATIONS:

1. Identify general locations for potential industrial uses.
2. Permit retail sales as an accessory use in the Industrial District

SINGLE-FAMILY RESIDENTIAL DISTRICTS

Single-Family Residential Districts are to be developed and promoted as neighborhoods free from any land usage which might adversely affect them.

RECOMMENDATIONS:

1. For new development, require buffering for controlling visual, noise, and activity impacts between residential and commercial uses.
2. Encourage single-family residential development to locate in the designated towns.
3. Allow duplexes, triplexes, and fourplexes as a conditional use in the "R-1" Residential Zone so long as the design is compatible with the single-family residential development.
4. Allow home occupations (professions and services, but not retail sales) by permitting the employment of one full-time equivalent individual not residing on the premises.

MULTIFAMILY RESIDENTIAL DISTRICTS

Multifamily Residential Districts provide for townhouses and multifamily apartment units. Areas designated in this category are those which are currently served or scheduled to be served by community or multi-use sewerage and water supply systems.

RECOMMENDATIONS:

1. Permit multifamily development in the Solomons, Price Frederick, and Twin Beach Towns.
2. Require multifamily projects to provide adequate recreational facilities—equipment, structures, and play surfaces.
3. Evaluate the feasibility of increasing the dwelling unit density permitted in the multifamily Residential Zone (R-2).

Figure 3-2. Verbal Format Policy Plan. Excerpted from *The Calvert County* [Maryland] *Comprehensive Plan* (1983), it contains no land use design map and is written in newspaper style; the recommendations constitute the policy content.

would be mapped: an urban district, a rural district, and special consideration/critical area districts. The special consideration areas may penetrate or overlay the urban and rural districts, delineating sensitive natural environment areas or built-up neighborhoods where special policies would either preclude development or allow it only if it met stipulated conditions.

More detailed classification systems designate additional policy areas within those three major distinctions. The urban area, for example, might be divided into a developed area consisting of the built-up central city and older suburbs and an urban growth or transition area only partially developed or undeveloped at the time of the plan and where future urbanization is encouraged. The rural area might be divided into agricultural districts where long-range commitment is made to agricultural and forest uses, with the remaining land being classified into less crit-

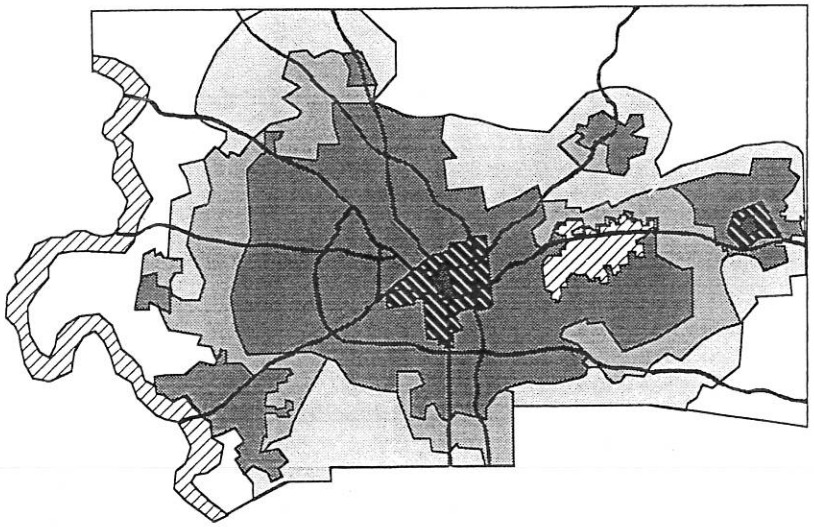


Figure 3-3. A Land Classification Plan. The map, adapted from the Forsyth County, North Carolina, growth management plan, illustrates the land classification format. The accompanying table summarizes the character, problems, and policy objectives of each classification area on the map. Adapted from City-County Planning Board, Vision 2005, 1988.

	Character	Attributes	Problems	Policy Objectives
1. Central Business District	Core area and focal point of the community Most intensive land uses Downtown office/ business district Concentration of prime architectural resources	Major employment center Location is major attraction for business Solid market for office space	Loss of retail magnets and daily shopping facilities Negative perceptions of safety Perception of lack of parking In competition with suburbs for office space	Office and employment center for major corporations Promotion as the focus of urban development in Forsyth County
2. Central Area	First ring of older neighborhoods surrounding downtown Predominantly residential with some mixed use High concentration of historically and architecturally significant homes	Close proximity to CBD attractions (theater, galleries, restaurants, events, etc.) Recent interest in inner city housing (new and rehab) Small lot residential areas more conducive to social interaction	Loss of population Aging population Residential structures in need of repair or rehabilitation Conflicts with infill development	New housing that will attract middle- and upper-income people Rehabilitation of existing housing
3. Urban Area	Contains major commercial, industrial, and office employment centers Has large undeveloped tracts of land adjacent to existing neighborhoods	Stable residential areas Convenient retail services Has employment centers Significant vacant land remains	Rapid growth and development Congested road system Conflicting land uses due to mix of zoning types	Development of activity nodes at planned locations Improved transportation system Preservation of stable neighborhood areas
4. Growth Area	Predominantly rural area with some subdivisions adjacent to farms Most land is undeveloped Lies within drainage basins that can be sewered efficiently	Directly adjacent to existing developed areas and services With proper planning contains prerequisites to accommodate future growth (roads, sewer interceptors, large vacant tracts)	Inadequate rural roads to accommodate future development Large investment needed in sewers, parks, etc., to serve expected growth Lacks retail services	Provision of sewer service in an orderly fashion to serve development Build adequate highway network to serve planned development Employment concentrations and major retail at defined activity nodes
5. Rural	Rural with little or no development Major land use is scattered low-density residential along secondary roads Farming a major activity	Prime farmlands Rural life style Attractive natural environment	Cannot be efficiently served with sewer Development will cause loss of prime farmland and contribution of agriculture to economy	Limited residential and commercial development Retention of farming activities Preservation of natural environment
6. Conservation	Lands adjacent to the Yadkin River, Salem Lake, and flood-prone streams	Environmentally sensitive areas Adjacent to public water supplies Important recreational resources	Development may negatively affect water supply resources Development may cause recreational and historical attributes to be lost	Establishment of a linear park along the Yadkin River Protection of conservation areas from development Retention of aesthetic characteristics

ical "rural" districts, perhaps considered as the long-range supply of land for future urbanization. The special consideration areas might be divided into areas for different critical environmental processes, for example, wetlands being separate from water supply watersheds, each with its own proposed policies, standards, and procedures for allowing future development.

The land classification plan shown in Figure 3-3 is from a plan for Winston-Salem–Forsyth County, North Carolina. Published in 1988, it won honorable mention from the American Planning Association in 1989. Six districts, called growth-management areas, are shown, as well as general locations for activity centers. The accompanying table describes the character, problems, and objectives for each of the policy districts. Policies about development densities and public capital improvements scheduled for each district are provided elsewhere in the plan. For example, the density range for residential development in the central business district is fifteen to twenty-five dwellings an acre compared to two to ten dwellings an acre in the short-range growth area.

Compared to the verbal policy format, land classification is more specific about the desired location of growth and other change, and about what areas should be protected from change. It is therefore less flexible in implementation. It requires more sophisticated analysis in its preparation.

The land use design format is the more traditional format of land use plans. It is more specific than the land classification plan about the future land use pattern as a goal form. For example, the urban land classification district is divided into retail, office, industrial, residential, or public/institutional use, and the map of the goal form specifies the locations for each. Figure 3-4 illustrates the land use design format. The maps in the figure are from the Howard County (Maryland) 1990 General Plan, which won an award from the American Planning Association in 1991. Figure 3-4a is Howard County's vision of the desired land use pattern for the year 2010. The policies map in Figure 3-4b summarizes strategies, consistent with the land use design, that are elaborated in strategy maps throughout the plan. Both maps are multicolored and more complex in their original form. They have been simplified for inclusion in this text.

The spatial specificity of the land classification plan and land use design serves several purposes. One is to promote efficiency by coordinating the size and location of future public facilities with the location and intensity of future residential, commercial, and industrial development. For example, the land use plan suggests where to acquire land and build schools, parks, and other community facilities to best serve future as well as present residential areas. It suggests where to locate expressways and transit to best accommodate future and present travel demand, where to construct sewer lines, and how large they must be to serve anticipated growth.

A second purpose of the land use design is to specify the most suitable long-range pattern to counteract the short-sighted misallocation of land through an unplanned market. For example, through the plan a city can encourage industrial development on sites with lower long-run municipal costs, adequate future

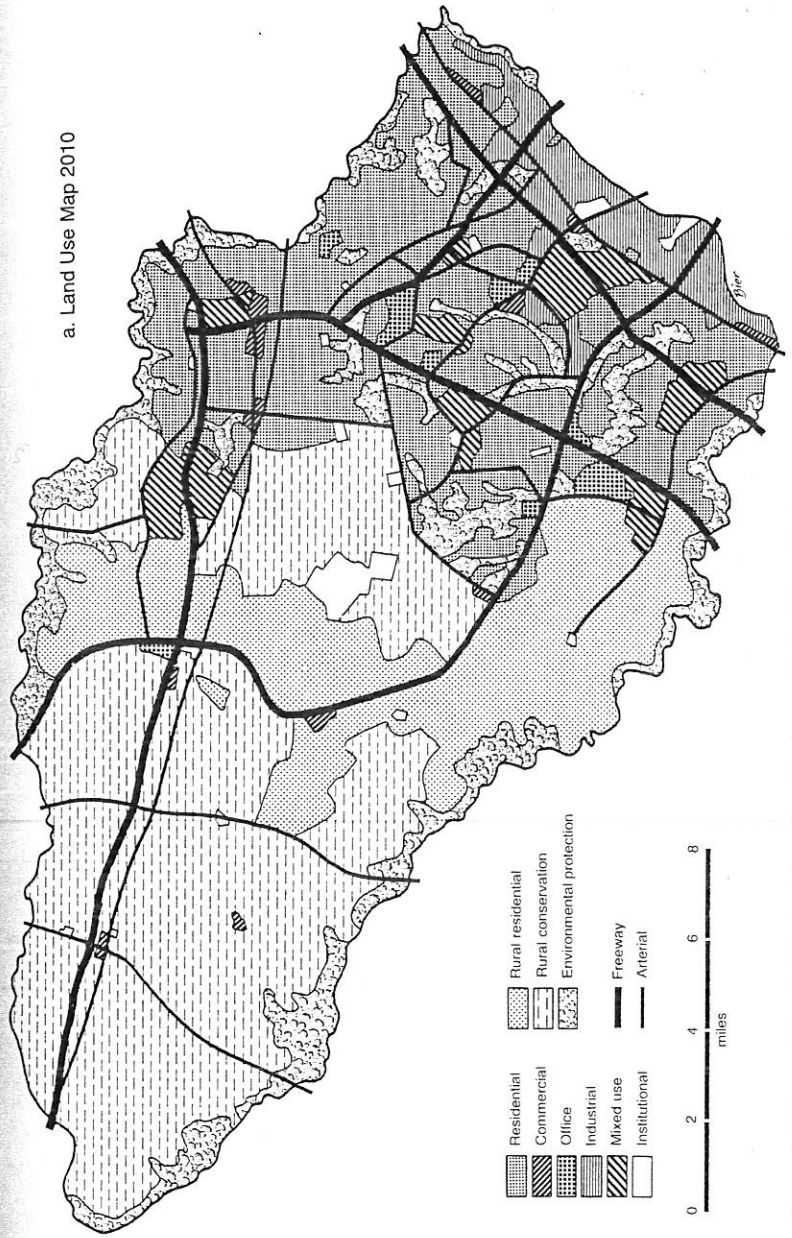
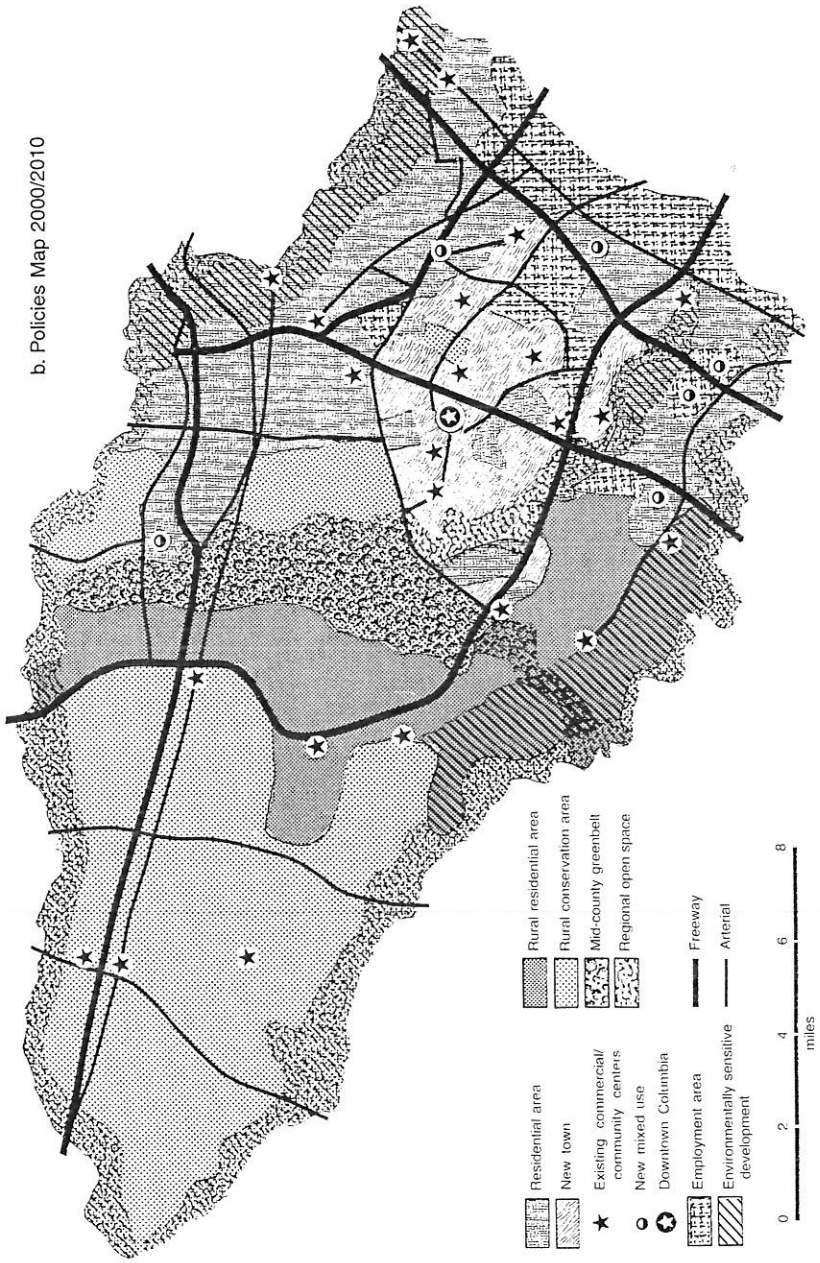


Figure 3-4. Howard County, Maryland, Land Use Design and Policy Maps. The Land Use 2010 map (a) illustrates the land use design format, while the Policies Map 2000/2010 (b) summarizes more detailed strategy maps from the plan. Howard County, Maryland, 1990.



transportation, and suitable slopes and soils for construction of industrial plants or offices. The city can then protect such sites from premature development in housing that would preclude more efficient long-term use as an industrial park. Or, a community can preserve the capability of a watershed to serve as a future water supply and avoid irreversible damage from premature industrial, commercial, or other land uses that would jeopardize water quality.

A third purpose of the land use design can be to provide a large-scale urban design—an imageable community of vistas, skylines, distinguishable neighborhoods, and interesting entranceways.

The policy planning methodology presented in chapters 10 through 15 is aimed at producing a policy plan in both the land classification and land use design format, which are both assumed to incorporate the verbal format as an initial section.

The Development Management Plan A community cannot make a quantum leap into the future depicted by the long-range goal form of the land classification or urban land use plan. The future can only be achieved through consistent application of the policies in the plan through development management measures and programs of community action. A community therefore needs a development management plan to help implement longer-range, general policy planning. In other words, a community needs both the long-range, general, goal-oriented plan and the shorter-range, means-oriented plan. They complement each other. Without roots in long-range policy, the development management system plan runs the danger of nearsighted suboptimization, long-run inconsistency, and inadvertent creation or aggravation of future land use problems. Conversely, without the shorter-range development management plan, it is more difficult to achieve the long-range plan.

The development management plan is a proposed sequence of actions by specific organizations of the community over a three-to-ten-year period to improve the community's development management system. Such a plan might include for example, deletions, modifications, and additions to environmental and land use regulations, development fees, preferential tax ordinances; specifications of land to be acquired and community facilities to be constructed; and specific purpose programs for affordable housing, community development, economic development and historic preservation. It is aimed at alleviating current and projected problems as well as attaining long-range goals, policies, and the goal form specified in the policy plan. It includes a time schedule for implementing various components of the plan and a financial and organizational plan to generate necessary revenues to carry out the plan. It also contains a more explicit analysis of the social, economic, and environmental consequences of implementing the plan than is possible in the policy plan (Table 3-1). The plan format, adapted from that proposed by the American Law Institute (1976), features a program of specific actions guided by a statement of goals and an analysis of conditions. Note that it does not necessarily include a long-range goal form.

Table 3-1. Content of the Development Management Plan

1. A section identifying present and emerging conditions.
2. A section of goals, objectives, standards, and input policies.
3. A program of specific actions, including deletions, modifications, and additions to regulations; the amounts and general locations of land to be acquired or otherwise reserved; characteristics and general locations of community facilities and infrastructure; affordable housing and community development actions; and other special purpose programs (e.g., central business district revitalization program).
4. A time schedule for implementing the actions.
5. Estimates of personnel and other resources required to implement the plan, including costs of capital improvements and property acquisitions.
6. A financial plan to generate the revenues to pay for the implementation of proposed actions, particularly capital improvements.
7. An assessment of financial, social, economic, and environmental costs and benefits of implementing the actions, and their distribution among segments of the community.

Source: Adapted from American Law Institute 1976.

While the development management plan remains a statement of intent, it makes a decisive step toward action. It translates goals, land use and environmental policies, and longer-range land use goal form into a specific action program. It addresses costs, priorities, scheduling, financing, assignment of responsibilities among agencies, and assessment of impacts. It is designed to obtain a commitment by decision-makers to a coordinated set of actions beyond adoption of general policy guidelines. Also, by bringing the plan into a specific short-to-intermediate-range timeframe in which projects can be completed and credit claimed within an elected official's anticipated term of office, this approach can improve the feasibility of the long-range plan.

The advance planning process should not postpone consideration of development management actions until after completion of more general policy plans. The policy plan should generally include at least an outline of a development management strategy. In the land classification plan, for example, the policy bundles for each land classification district might suggest development management measures. By explicitly including development management considerations, even if only in outline form, the long-range land use design plan and land classification plan envisioned in this text differs in an important way from the traditional land use plan, which focuses almost solely on the goal form and not the means to bring it about (Kent 1964, 1991).

The plan for Gresham, Oregon (1980), provides an example of a plan that combines both long-range policy and specific development management proposals in a hybrid plan. It integrates an analysis of facts (called "findings" to reinforce the legal defensibility of the plan), a specification of goals and corresponding policies, a combination of land classification and urban land use design on a map, a capital improvements program, and standards and procedures for a unified development code. Furthermore, the land classification plan and goal-form land use design are integrated into regulations as explicit criteria; they determine which procedures

and standards of the development code apply to a specific property. By adopting such an omnibus plan, the local government adopts at the same time the essentials of the development management system; there is no separate subsequent interpretation and implementation of the plan into a development code. When adopted as local legislation, the code becomes the land use regulation, which directly incorporates the plan. Table 3-2 is an illustrative contents page for an omnibus plan like Gresham's (Gresham Planning Division 1980).

Table 3-2. Hybrid Plan Table of Contents

1. Findings.
2. Policies, including both a land classification plan and urban land use design plan as goal form statements.
3. Development code, including procedures for obtaining development permits; procedures vary according to land classification district and land use proposed in the land use design for the property.
4. Standards that development must meet; standards vary according to land classification district in which the property is located and the land use indicated in the land use design for the property.
5. Capital improvements plan
6. Special functional plans, such as sewerage plan, water system plan, transportation plan, or parks and open space plan, for example.
7. Special area plans, such as central business plan, transit station area plans, or neighborhood conservation plan.

Note: This hybrid format integrates the land use design, land classification, and development management formats into the plan, and then goes a step further by incorporating those elements into specific procedures and standards that constitute a development code. When adopted as local legislation, the code becomes the land use regulation, which incorporates the plan directly.

Source: Adapted from Gresham Planning Division 1980.

Advance planning should include annual reports and periodic revisions to adopted plans. The annual reports should summarize current development, land use, and environmental conditions. They should also report on the status of the development management system and its effectiveness and suggest adjustments to long-range policy and to procedures and standards of development management measures for study and action in the forthcoming year. More fundamental reexaminations and revisions can be made less often, as need and opportunity permit, but preferably every five to ten years.

The Problem Solving Function

Problem solving is addressed to situations in the land use game that are not anticipated adequately through advance planning. For example, a problem not addressed in the plan might emerge, such as the declining water quality in the water supply watershed or a growing concern about the decline of a neighborhood. A second type of situation occurs when one of the players in the land use game proposes a significant modification to the community's development management system. For example, the mayor proposes an aggressive annexation program, an

economic developer proposes an industrial park, or the chamber of commerce proposes revisions in central business district development regulations.

In the first type of situation, the question is what to do about the newly perceived problem on the community's agenda. The planner's task is to transform an expression of discontent or need into an explicit problem statement that provides land use game players more useful models of the situation; the planner must also propose and evaluate solutions that players may consider. In the second type of case where the stimulus is a non-planned proposal by a game player to change the land use management system, the planner's role is focused on evaluation of the proposal. That means analyzing its impacts with respect to adopted goals, policies, plans, and standard policy analysis criteria (equity, effectiveness, efficiency) and with respect to the way the proposal would interact with other elements of the development management system. The planner may, of course, suggest alternative solutions to the implied problem and even suggest redefinitions of the problem.

The problem solving function draws from the information system and the intelligence produced through it, as well as from goals, policies, proposed goal-form land use patterns, and the planned development management system specified in adopted plans. Rational analysis and community discourse are employed, as in advance planning, but are adapted to the constraints of time and the less-comprehensive nature of the inquiry. More specifically, problem solving includes the following tasks:

1. *Problem definition.* In this step, the planner gathers, verifies, and organizes relevant information and states the problem situation in simple, precise, meaningful terms and in sufficient detail to provide a clear, accurate picture of the problem situation.
2. *Specification of goals and evaluation criteria.* There should be a statement of what should be achieved by solving the problem and what additional evaluation criteria (e.g., cost, equity, administrative difficulty, political feasibility) will be used in evaluating proposals and alternative solutions.
3. *Identification and refinement of alternatives.* Alternative solutions are explored, including variations on the no-action or status-quo alternative.
4. *Evaluation of alternatives.* The consequences of alternatives are assessed with reference to previously developed goals and evaluation criteria. This evaluation may be as modest as a listing of advantages and disadvantages of each choice and an estimation of costs. The distribution of costs and benefits over space and population groups is often critical.
5. *Recommendations.*

Tasks 1, 2, and 3 are deemphasized when problem solving is stimulated by a specific proposal rather than a problem.

The outputs of problem solving differ in several ways from those of advance planning. Memoranda and oral reports, issue papers, or draft legislation or decision rules are more likely than substantial publications. There is no ideal format.

Still, we advocate adherence to the components of a plan—a section about conditions and problem structure, a section on goals and evaluation criteria, a section on alternative policies or actions, a section on assessments of alternatives, and a section on recommendations.

Relevant planning theory and methodology for action planning or problem solving are underdeveloped, and practice is largely catch-as-catch-can. The art of personal relations and politics plays a large role. Friedman (1969) has suggested some of the characteristics necessary to improve professional practice in so-called action planning: sharpened self-knowledge and perception of the planner in interpersonal situations together with a capacity for empathy to see the situation as other actors in the land use game see it; capacity to learn about a situation quickly and rapidly integrate this learning with knowledge, plans, and policies already on hand; knowledge about conflict, power, and the political process; and skills in the art of getting things done on time.

Sawicki and Patton (1986) also suggest a methodology for "quick policy analysis" based on a variation of the rational model and comprising quickly applied but theoretically sound methods and techniques to address public policy problems or analyze proposals of others. Table 3-3, adapted from Patton and Sawicki (1993), indicates the basic methods of quick policy analysis as they relate to the steps in the problem solving process.

Table 3-3. Steps and Methods in the Problem Solving Process

Steps in the Process	Appropriate Methods
All steps	Identifying and gathering data Library search methods Interviewing for policy data Basic data analysis
1. Problem definition	Communicating the analysis Back-of-the-envelope calculations Quick decision analysis Creation of valid operational definitions Political analysis The issue paper/first-cut analysis
2. Specification of goals and other evaluation criteria	Technical feasibility Economic and financial possibility Political viability Administrative operability
3. Identification and refinement of alternatives	Researched analysis No-action analysis Quick surveys Literature review Comparison of real-world experiences Passive collection and classification Development of typologies Analogy, metaphor, and synectics

Table 3-3, continued

Steps in the Process	Appropriate Methods
	Brainstorming
	Comparison with an ideal
	Feasible manipulations
	Modifying existing solutions
4. Evaluation of alternatives	Extrapolations
	Theoretical forecasting
	Intuitive forecasting
	Discounting
	Sensitivity analysis
	Allocation formulas
	Quick decision analysis
	Paired comparisons
	Satisficing
	Lexicographic ordering
	Nondominated-alternatives method
	Equivalent-alternative method
	Matrix display systems
	Political analysis
	Implementation analysis
	Scenario writing

Source: Adapted from Patton and Sawicki 1993, Figure 2-3, 65.

The Development Management Function

Lay citizens, many elected officials, and even some planners look at drafting and adoption of a land use or a comprehensive plan as the solution to managing land use change. They do not understand that ordinances, capital improvements, and other governmental actions must be enacted before a community has an effective planning program. Moreover, beyond the adoption of ordinances, development management includes the ongoing process of reviewing and approving the location, type, size, density, timing, mix, and site design of proposed developments. It also includes enforcing the ordinances and otherwise playing an active role in the land use game. In addition, it includes making decisions about water and sewer extensions, transportation corridors and facilities, parks and recreation, and other public facilities. Finally, development management involves feedback to the intelligence, advance planning, and problem solving functions, as well as adjustment of land use controls in response to experience. In short, we see direct involvement in development management as an extension of planning. Planning becomes action, and action is the final step in the design of policy.

Planners have greater need to be involved directly in operating the development management system the more sophisticated its strategy, the greater its reliance on performance standards, the more flexibility allowed of developers, the more negotiation expected of local government officials, and the greater the extent of joint public-private development of major projects.

Figure 3-1 illustrates both the relationships among the four functions of the planning program and the major parts of each function. The planning program begins with intelligence, which feeds into all three of the remaining functions. Advance planning draws on intelligence. Problem solving draws on both intelligence and on plans produced through advance planning. Development management, the culmination of planning, draws on all three. Development management may, for example, incorporate a program to influence behavior and development through dissemination of intelligence; that is, providing systematic intelligence and responding to needs of development decision-makers. It may incorporate policy plans as explicit criteria for development permits and infrastructure extension. Furthermore, there is also feedback from problem solving and development management to advance planning and intelligence. Monitoring and assessment of development management, for example, are a part of intelligence. Thus, the four functions operate simultaneously at different levels of refinement perhaps but all supporting one another, and all providing important services in the land use game.

Roles of Planners, Elected Officials, Appointed Officials, Market Participants, Interest Groups, and Citizens in the Planning Program

The professional planner organizes and manages the planning program to fulfill the four functions of land planning in the land use game. As stressed in chapters 1 and 2, however, land use and environmental planning is a merging of technical and sociopolitical competencies and involves many participants in addition to the planner. Governmental officials—elected officials, citizens and experts appointed to various community boards, and city staff such as city attorneys, public works engineers, and inspectors—play important roles. Nongovernmental representatives, such as developers, landowners, and associated land market players, also participate, as do special interest groups such as environmental advocates, neighborhood associations, and individual citizens. All four functions—intelligence, advance planning, problem solving, and operation of the development management system—require substantial participation from these other participants. Without them, planning will be ineffective no matter how technically competent.

The planner plays several roles, using the skills and qualities called for in chapter 1. She or he serves as a visionary and creative innovator with the responsibility to look beyond present conditions and near-term projections and invent and visualize possibilities. The planner also advocates on behalf of future citizens, firms, and organizations as well as current residents who otherwise have little voice in the land use game. In addition, the planner contributes a comprehensive perspective required for coordinating multiple interests, objectives, policies, and programs of action. A good planner is also a consensus-builder who facilitates group planning,

problem solving, and decision-making, emphasizing the more comprehensive and shared public interests.

It is also important for the planner to be a communications expert, not only in the sense of communicating technical analyses and recommendations, but also in the sense of organizing, facilitating, and managing the planning and development management process as an effective communication process, enabling all participants to reach better decisions. In other words, the planner manages community discourse. Thus, in the land use game, the planner provides technical leadership but depends on a team of diverse players. Of course, the planner should also be professionally competent in the technical aspects of analysis, projection, design, and evaluation.

Elected officials play different roles. They must lead in the broader sense of setting the agenda of issues and priorities to be addressed. They determine the scope of the planning program and the size of the planning agency. In the process of adopting and implementing the development management system, they are among the most important consumers of intelligence, advance planning, problem solving, and other advice from planners. Beyond being consumers, however, elected officials should participate throughout the advance planning and problem solving processes to assure their sense of ownership and commitment to the plans that result. They will then be less likely to ignore them or misuse the plans in their decisions.

Elected officials also determine the allocation of responsibility and authority in making development permit decisions and public investments among planners, other local officials, appointed boards, and citizens. In fact, elected officials often retain much project review and public-investment decision prerogatives for themselves and thereby play a major role in day-to-day development management, not just in setting policy and adopting legislation.

Appointed officials—both government employees and the lay people who serve on various advisory, administrative, or quasi-judicial boards—also play significant roles. They serve as sounding boards and advisors, as well as decision-makers on permits required for some development proposals. It is important for inspectors, attorneys, public works engineers, and operating department heads to also participate in the advance planning, problem solving, and intelligence functions. They should help define problems, formulate goals and policies, specify legislation and other actions, and evaluate alternatives as well as administer development regulations and build infrastructure.

Interest groups, including those representing the natural environment, the development industry, landowners, neighborhoods, business owners, and other development market players, are consumers of intelligence services, advance planning, problem solving, and development management decisions. Interest groups also advocate their views during goal-setting, policy formulation and evaluation of alternatives in advance planning, problem solving, and design and interpretation of development management system measures, as well as in development-permitting procedures and public infrastructure decisions.

Where the various land use game players have an interest, and where they play a role in influencing land development, will become more apparent in Parts 2, 3, and 4 of this book. It will become clearer in the chapters that follow when the planner, as a lead player in the land use game, involves other players and the public; gauges reactions from other players; and determines where adjustments are needed to studies and recommendations.

Organization of a Planning Program

The planning agency should be organized to accomplish the four functions efficiently while incorporating relevant participation and effective community and stakeholder discourse. At the local government level, the planning department is normally tied closely to the city or county manager's office. In addition to the planning department, the planning program would involve task forces; some temporary (for developing an approach to address flooding hazards, for example) and others that are more or less permanent (meeting regularly to review applications for development permits, for example). These groups would include expertise and perspectives from other parts of the local government, including public works, housing, community development, recreation, public safety, tax appraisal and land records, among others, as well as representatives of development interests and public interest groups.

The program should incorporate one or more planning-oriented boards of citizens to expand the resources that a planning department and professional planners can bring to the formation of policy and its implementation. A planning board, for example, is involved in all four planning functions. Usually a quasi-judicial board is needed to hear requests for variances (for hardship relief) and other appeals from permitting standards and decisions. In addition, there may be need for special boards for historic neighborhoods, appearance districts, and other special purposes. Those relatively permanent boards should systematically involve relevant neighborhood and other special interest groups.

Within the planning department, and sometimes even within the various boards associated with the department, organization should assure that each of the four functions is given appropriate attention and resources. One way to do that is to divide the department into four divisions corresponding to the four functions of planning: information, or intelligence; advance planning, or long-range planning; problem solving, or policy analysis; and development management, or current planning. Such division helps assure continued attention to advance planning, for example, to counter constant pressure to devote personnel, budget, and attention to development management and crisis management (problem solving). Sometimes the intelligence function is an interdepartmental operation involving representatives from land records as well as planning, public works, and other operating departments; then it is under more central control of the city or county manager's office. A division called current planning might include responsibility

for both problem solving and administering development regulations. On the other hand, the planning director might not want to make the organizational division of the department too sharp, allowing instead for the Japanese concept of quality circles, which facilitate shifting and focusing staff efforts to meet changing community needs.

Linking Goals and Action

We might think of a community's land use planning program as establishing a chain of logic and participation for making land use and development decisions. The chain must link goals and problems at one end to actions at the other. Unless the planning and management system is logically consistent with the community's goals and input policies from regional, state, and federal governments, it will fail to achieve progress—regardless of how conscientiously regulations are implemented and public investments made. By the same token, regardless of how well plans are related to goals, the land planning program and the community will fail to achieve their potentials unless regulations and public investments follow the plans. It is important to attend to each function of the planning program and to each link in the planning chain, from goals and problems right through to the administration and enforcement of regulations.

In general, we conceive of the planning program as proceeding from ends to means, from the general to the particular, and from the long range to the short range. At the same time, the planner must appreciate and seize opportunities to work on particular problems in more detail or to implement elements of the development management system even before comprehensive policy is in place.

As for planning theory, the approach described in this chapter might be described as "more-or-less" rational planning. It falls short of the pure rational planning model in that it accepts less than perfect information and less than exhaustive listings of all alternatives. On the other hand, the proposed approach, as described in this chapter and in the methods chapters to follow, is more idealistic than the incrementalist approach. The text advocates a comprehensive perspective on urban change and the role of government and planner; systematic consideration of goals; and development of several alternatives, some of which propose basic structural changes beyond incremental adjustment and some of which are also specific actions. It also incorporates community discourse.

In describing the four functions of a land use planning program, we have purposely emphasized fundamental concepts. Similarly, in the chapters on information systems and advance planning that follow, the emphasis is on establishing a basic process, rationale, and methodology, not on the latest and most sophisticated techniques. This book is meant to provide an enduring framework. The planner can refine the simple techniques presented here and use more advanced forms of analysis as the community's program and the profession itself advances, but he or she can still rely on the basic rationale provided.

In Part 2, which follows, we discuss the intelligence function. However, we realize that direction-finding, which is covered in Part 3, is an activity that is often taken in conjunction with or even before the studies covered in Part 2. Readers may wish to consider chapter 10 on direction-setting as a chapter in Part 2.

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